APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,724	02/12/2004	Richard Louis Arndt	AUS920031060US1	5919

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EXAMINER
BLACK, LINH

ART UNIT	PAPER NUMBER
2169	

NOTIFICATION DATE	DELIVERY MODE
10/03/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptonotifs@yeeiplaw.com

	Application No.	Applicant(s)
	10/777,724	ARNDT ET AL.
Office Action Summary	Examiner	Art Unit	
	LINH BLACK	2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>27 June 2008</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-10 and 22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-10,22</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This communication is in response to the documents filed 6/27/08. Claims 1-10 and 22

are pending in the application. Claim 1 is an independent claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by

Armstrong et al. (US 6467007).

As per claim 1, Armstrong et al. teach

a method for managing shared resources in a logical partitioned data processing

system – fig. 1: data processing apparatus; fig. 2: logical partitions with partition

manager for shared services; col. 1, lines 43-67; col. 4, line 55 to col. 5, line 65.

granting, by a server partition in the logical partitioned data processing system, a logical

resource owned by the server partition to a client partition in the logical partitioned data

processing system – fig. 2, the primary partition (A) is the server partition, the secondary

partition (B)/(C) is the client partition; col. 5, lines 23-65.

communicating an identifier from the server partition to the client partition; and
responsive to the client partition accepting the identifier, mapping, the logical resource
into a logical address space of the client partition, wherein the mapping is performed by
the client partition – col. 1, line 52-67 (a partition manager or hypervisor manages the
logical partitions and facilitates the allocation of resources to different logical
partitions….maintains separate virtual memory address spaces for the various logical
partitions so that the memory utilized by each logical partitions is fully independent of
the other logical partitions. One or more address translation tables are typically used by
a partition manager to map addresses from each virtual address space to different
addresses in the physical, or real, address space of the computer…so that the shared
memory can be accessed directly by the logical partition. Examiner interprets that the
Address Translation Tables store IDs that the clients can use to access resources
across partitions); col. 5, lines 23-65 (each logical partition 40-44 executes in a separate
memory space, represented by virtual memory 60. Moreover each logical partition is
statically and/or dynamically allocated a portion of the available resources in computer
10…Resources can be allocated in a number of manners…); col. 7, line 66 to col. 8, line
36.

As per claims 2-4, Armstrong et al. teach
generating an identifier for the logical resource, wherein the identifier is generated by a
hypervisor; wherein the identifier is unique within the client partition – col. 1, lines 43-67;

col. 7, line 65 to col. 8, line 35; fig. 3, virtual page number. Since each logical partition

operates as a fully independent computer, its each logical resource id shall be distinct

within the partition for translating/mapping and identification purposes and which

separates from the resource outside of the partition, thus, cannot be used to access the

logical resource outside.

As per claim 5, Armstrong et al. teach resources may be allocated to any logical

partition in the alternative; moreover, resources can be reallocated on a dynamic basis

to service the needs of other logical partitions – col. 5, lines 55-65; thus, when

resources need be relocated, a client/secondary partition has to return the control of

resource back to the primary/server partition.

As per claims 6-8, Armstrong et al. teach

rescinding, by the server partition, the logical resourse; responsive to a determination,

at the server partition, that the client partition is incapable of gracefully returning the

logical resource, performing a forced rescind operation; preventing translation tables in

the client partition from containing references to a physical address of the logical

resource – col. 3, lines 13-56, especially lines 23-43 (requires that one or more entries

in the address translation table be invalidated to ensure that a subsequent access to the

virtual memory address space will attempt to access an unmapped virtual memory

address).

As per claims 9-10, Amstrong et al. teach computer 10 need not be shut down if there is a hung processor in a partition; it is often desirable to initiate a reset operation to the hung partition supported by another processor. A reset request and a memory access interrupt are created...and sent to the problem partition...col. 3, lines 1-49; delay/waits at block 124 for the target processor to return to a known initial state by setting a timer and periodically checking the responsiveness of the target processor...col. 8, lines 35-59.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al. (US 6467007) in view of Farber et al. (US 20010056500).

As per claim 22, Amstrong et al. teach

communicating an identifier from the server partition to the client partition; and responsive to the client partition accepting the identifier, mapping, the logical resource into a logical address space of the client partition, wherein the mapping is performed by

the client partition – col. 1, line 52-67 (a partition manager or hypervisor manages the logical partitions and facilitates the allocation of resources to different logical partitions....maintains separate virtual memory address spaces for the various logical partitions so that the memory utilized by each logical partitions is fully independent of the other logical partitions. One or more address translation tables are typically used by a partition manager to map addresses from each virtual address space to different addresses in the physical, or real, address space of the computer...so that the shared memory can be accessed directly by the logical partition. Examiner interprets that the Address Translation Tables store IDs that the clients can use to access resources across partitions); col. 5, lines 23-65 (each logical partition 40-44 executes in a separate memory space, represented by virtual memory 60. Moreover each logical partition is statically and/or dynamically allocated a portion of the available resources in computer 10...Resources can be allocated in a number of manners...); col. 7, line 66 to col. 8, line 36 (...the address translation table 92 with items virtual page number, real page number...The virtual page number can be interpreted as an identifier).

However, Amstrong et al. do not teach the identifier is a cookie. Farber discloses the sharing of resources and the partitioned cache into separate areas for each subscriber – pars. 336-338; The resources relies on a so-called cookie - pars. 85, 329. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Amstrong's teaching with Farber's teaching in order to allow different ways of identifying of resources that partitions can request to share.

Response to Arguments

Applicant's arguments with respect to claims above have been considered but are not persuasive.

In the specification, Applicant discloses "The LPAR management firmware, also known as a hypervisor, maintains a list of all resources that a given partition may access, and when the operating system attempts to gain access to a new resource, the list is referenced to decide if the access should be granted. Normally, the hypervisor ensures that the resource lists of each partition are disjoint. By allowing a given resource to appear in the resource list of two or more partitions, that resource may be shared. What is more difficult, and the subject of the present invention, is managing the changes to the resource lists in such a way that the sharing operating systems can handle the various transitions in a graceful manner. In accordance with a preferred embodiment of the present invention, the hypervisor is modified to include four hypervisor functions plus a specific return code to manage the granting of access of resources owned by one partition to another (client) partition, accepting of granted resources by client partitions, returning of granted resources by client partitions, and rescinding of access by the owning partition. These four hypervisor functions are invoked either explicitly by the owning and client partitions or automatically by the hypervisor in response to partition termination. The hypervisor functions provide the needed infrastructure to manage the sharing of logical resources among partitions.

" – pages 13-14.

Applicant also discloses "Granting access is accomplished by requesting that the hypervisor generate a specific cookie for that resource for a specific sharing partition. A cookie is an opaque reference number, which identifies an item, such as a resource in this case." – page 16, last paragraph; "the grantee's operating system may accept the shared logical resource and map the resource into the grantee's partition logical-to-physical map table 424." – page 20, 1st paragraph.

Examiner interprets granting of access of resources equivalent to allowing/permitting or authorizing of access of resources. Thus, regarding the Applicant's argument IA that Amstrong fails to teach "granting...a logical resource", Examiner disagrees.

The cited prior art discloses "

(5) With logical partitioning, a single physical computer is permitted to operate essentially like multiple and independent "virtual" computers (referred to as logical partitions), with the various resources in the physical computer (e.g., processors, memory, input/output devices) allocated among the various logical partitions. Each logical partition executes a separate operating system, and from the perspective of users and of the software executing on the logical partition, operates as a fully independent computer.

(6) A shared resource, often referred to as a "hypervisor" or partition manager, manages the logical partitions and facilitates the allocation of resources to different logical partitions. As a component of this function, a partition manager maintains

separate virtual memory address spaces for the various logical partitions so that the

memory utilized by each logical partition is fully independent of the other logical

partitions. One or more address translation tables are typically used by a partition

manager to <u>map addresses from each virtual address space to different addresses in</u>

<u>the physical, or real, address space of the computer. Then, whenever a logical</u>

<u>partition attempts to access a particular virtual address, the partition manager</u>

<u>translates the virtual address to a real address so that the shared memory can be</u>

<u>accessed directly by the logical partition.</u>" – col. 1, lines 43-67.

Examiner interprets the server partition's logical resources are the resources that

are allocated for the primary partition in which these resources are mapped to the

primary/server partition, thus, in a broadest sense, owned and operated by the

server/primary partition and can be shared. Other partitions cannot access these

resources without permission for sharing and mapping of addresses. The cited col. 7,

line 66 to col. 8, line 36 disclose the address translation table 92 with items virtual page

number, real page number...The virtual page number can be interpreted as an

identifier. Claim 1 is broad in that Applicant has not described information regarding

the identifier to further distinguish the limitation from the teachings of the prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to LINH BLACK whose telephone number is 571-272-

4106. The examiner can normally be reached on Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, James Trujillo can be reached on 571-272-3677. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James K. Trujillo/   LINH BLACK
Supervisory Patent Examiner, Art Unit 2169   Examiner
                                               Art Unit 2169

September 29, 2008